a moment's thought will show that all that has been said in reference to a carbon photosphere will apply with equal force to any substance whatever. If, then, we can have photospheres formed of some heavier atoms, they should be situated deeper in the mass of the star, and should be overlaid by carbon, which should either form a higher photosphere in turn or should betray its presence by absorption. We ought, then, to have as great a variety of carbon stars as we have of other types. The fact of the rarity of carbon stars is one of the strongest evidences that it is pre-eminently *the* photospheric element. However this may be, the main conclusions here set forth remain unaffected, because they hold good for any substance which forms a photosphere, granting only the four postulates with which we started, and that this substance behaves like all others whose condensation-curves are known.

Observations of Comet a 1903 *from Photographs taken with the 30-inch Reflector of the Thompson Equatorial and the Astrographic Equatorial of the Royal Observatory, Greenwich.*

(*Communicated by the Astronomer Royal.*)

Date and G.M.T. 1903.				Apparent R.A.			Apparent Dec.			Corr. for Parl. R.A.	Corr. for Parl. Dec.	log Δ.
	d	h	m	s	h	m	s	°	′	″	s	″	
Jan.	28	5	54	31	23	7	51·38	4	30	20·5	+·17	+4·0	0·2130
Feb.	9	6	6	1	23	24	31·04	8	4	53·5	·20	4·1	0·1945
	9	6	19	59	23	24	31·93	8	5	2·7	·21	4·1	0·1945
	10	6	9	38	23	26	5·16	8	24	42·4	·21	4·1	0·1906
	10	6	24	14	23	26	6·61	8	24	59·6	·21	4·2	0·1906
	11	6	14	36	23	27	40·86	8	44	54·1	·21	4·2	0·1865
	11	6	25	21	23	27	41·67	8	45	4·0	·22	4·2	0·1865
	12	6	22	13	23	29	18·78	9	5	27·7	·22	4·2	0·1823
	17	6	24	41	23	37	50·76	10	51	55·8	·24	4·4	0·1587
	17	6	31	55	23	37	51·31	10	52	2·7	·24	4·4	0·1587
	18	6	22	16	23	39	38·30	11	13	58·2	·24	4·4	0·1534
	23	6	33	58	23	49	3·07	13	7	0·6	·27	4·8	0·1235
	25	6	33	46	23	52	59·49	13	52	30·8	·28	4·9	0·1098
	26	6	34	36	23	54	59·78	14	15	4·9	·29	5·0	0·1024
Mar.	3	6	35	24	0	5	11·79	16	0	47·3	·34	5·7	0·0439
	6	6	44	15	0	11	14·71	16	51	31·8	·35	5·9	0·0334
	11	6	53	4	0	20	12·23	17	23	25·6	·44	7·5	9·9348
	11	7	7	58	0	20	13·22	17	23	20·5	·45	7·6	9·9348
	11	7	25	59	0	20	14·34	17	23	17·6	·44	7·8	9·9348
	12	6	54	17	0	21	40·65	17	17	0·6	·46	7·8	9·9208
	13	6	55	55	0	23	0·06	17	4	44·4	·48	8·1	9·9048
	15	7	4	20	0	25	8·11	16	19	43·3	·51	8·9	9·8730
	16	6	59	24	0	25	54·72	15	45	48·7	+·53	+9·2	9·8570

The photographs up to and including the first on March 11 were taken with the reflector, the remainder with the Astrographic telescope. From January 28 to February 17 one exposure, and from February 18 to March 16 two exposures were given on each plate. Fuller details of these observations will be given in the Greenwich volume for 1904.

On the Astronomical Observations recorded in the "Nihongi," the ancient Chronicle of Japan. By E. B. Knobel.

Our knowledge of the *Nihongi*, which is the standard native history of ancient Japan, is derived from the translation made by Mr. W. G. Aston, which was published by the Japan Society a few years ago.

The *Nihongi* purports to be a history of Japan from the earliest mythological times to the year A.D. 697.

It contains the record of several astronomical observations, which are not without interest.

The observations consist of records of "Eclipses of the Sun and Moon," "Occultations of Stars and Planets," "Conjunction of Planets," "Apparition of Comets and Meteors," and two observations apparently of the Aurora Borealis.

The period covered by these observations is from the year A.D. 620 to 696.

The chronology of the earlier part of the *Nihongi* has been shown by several authorities to be entirely unreliable, and indeed Bramsen does not hesitate to assert that the fictitious dates therein ascribed to events, constitute one of the greatest literary frauds ever perpetrated. Though the above remark applies more particularly to chronicles before A.D. 600, it is of importance to critically examine the dates given to the astronomical events.

This is attended with some difficulty on account of the complicated chronological system in use in Japan, and which was borrowed entirely from China.

The elements of Japanese chronology are succinctly described by Mr. Kinoshita in his interesting little book, *Ancien Japon*, and also by the late Mr. Williams, the former assistant-secretary of the Royal Astronomical Society, in his work on "Chinese Observations of Comets"; but for the precise reconciliation of dates, the *Japanese Chronological Tables* of Bramsen, published at Tokio in 1880, though they go no further back than A.D. 645, are quite indispensable.

The year was a lunar year, consisting of twelve months of twenty-nine or thirty days; but in order to establish some correspondence between the months and the seasons, an additional month was intercalated every thirty-three months, or seven intercalary months in the lunar cycle of nineteen years. Common years had therefore 354 days, and embolismic years 383 or 384 days. The rules for determining the date of an intercalary